REMARKS

The official action of 10 October 2008 has been carefully considered and reconsideration of the application as amended is respectfully requested.

Applicants have amended the drawing with the submission of a replacement sheet that identifies the sequences in Fig. 1 by SEQ ID NO. This respectfully removes the basis for the objection to the specification at page 3 of the official action. The specification has been amended to include a revised Sequence Listing that includes the sequences in Fig. 1. A computer readable form copy of the Sequence Listing and the required statements of identity and no new matter will follow.

The claims have been amended to remove the bases for the claim objections appearing in the paragraph bridging pages 2-3 of the official action and the claim rejections under 35 USC 112, second paragraph, appearing at pages 7-8 of the official action. All claims as amended are respectfully considered to be sufficiently definite to satisfy the dictates of 35 USC 112, second paragraph.

The claims have also been amended to remove the bases for the enablement rejections appearing on pages 3-7 of the official action, as next discussed.

Claim Rejections-35 USC § 112, first paragraph
Rejection 1.
Enablement Rejection

First Applicants respectfully note that they have cancelled subparagraph 1 (c) of

claim 1, encompassing nucleotide sequences that hybridize under stringent conditions to the nucleotide sequences comprising SEQ ID NO: 3, 17, 19, 21, 23, 25, 27 or 29; subparagraph 1 (b) of claim 1 encompassing nucleotide sequences SEQ ID NO: 3, 17, 19, 21, 23, 25 and 27; and subparagraph 1 (e) of claim 1 encompassing nucleotide sequences with at least 70% sequence identity to SEQ ID NO: 3, 17, 19, 21, 23, 25 and 27. Accordingly, the amendment to the claims removes the bases for the rejection that was predicated on the presence of these recitations in the claims.

Regarding the basis for the rejection predicated on the claim encompassing proteins with at least 80% amino acid identity to SEQ ID NOs: 4, 18, 20, 22, 24, 26 or 28, Applicants respectfully traverse the rejection.

Applicants respectfully submits that the quantity of experimentation required to practice the invention as defined in he claims as amended is routine and not undue. The courts have clearly held that the fact that experimentation may be complex does not necessarily make it undue if the art typically engages in such experimentation. For example, see MPEP §2164.01 (See also *In re Certain Limited - Charge Cell Culture Microcarriers*, 221 USPQ 1165, 1174 (Int'l Trade Comm'n 1983) *aff'd sub nom. Massachusetts Institute of Technology v. A.B. Fortie*, 227 USPQ 428 (Fed. Cir. 1985)).

In particular, the Federal Circuit has held that even extensive experimentation is not undue in the molecular biology arts, particularly with respect to polypeptide variants. For example, the court concluded that extensive screening experiments to determine whether a polypeptide variant maintained a biological activity, while being

voluminous, were not undue in view of the art which routinely performs such long experiments.

In the words of the Federal Circuit:

> The claimed compositions recite isolated polypeptides with 60% or more sequence identity to SEQ ID NO: 3 that suppress proliferation of lympho-hematopoietic cells. The only experiments, if any, that need be performed to enable the entire scope of the claim are those designed to determine which sequences retain the ability to suppress proliferation of lympho-hematopoietic cells. The sequence of polypeptides retaining biological activity is determined through routine experimentation that is empirical in nature, typically employing nothing more than performing the same assay disclosed in the specification on a variety of sequence variants of the polypeptide made by routine recombinant DNA techniques. Since these experiments are empirical in nature, no undue experimentation is required. In other words, the only experimentation that may be required to enable the claimed invention are those experiments to determine the presence of a certain activity, and since this only requires a routine assay on polypeptide variants to determine the active variants, no undue experimentation is necessary. (*Hybritech v. Monoclonal Antibodies, Inc.* 231 USPQ 81 (Fed. Cir. 1986).

In the present case, the claims are directed to nucleic acids encoding a fluorescent protein, where the protein has an amino acid sequence that is at least 80% identical to SEQ ID NO: 4, 18, 20, 22, 24, 26 or 28. As in *Hybritech*, polypeptides

according to the invention that retain the fluorescent properties are "determined through routine experimentation that is empirical in nature, typically employing nothing more than performing the same assay disclosed in the specification on a variety of sequence variants of the polypeptide. . . ." As in *Hybritech*, "since these experiments are empirical in nature, no undue experimentation is required." See *Hybritech* supra.

As in *Hybritech*, the polypeptides of the claimed invention that retain the fluorescent property can be routinely determined as described in the specification, for example, on page 10 lines 29-34; and on page 12 lines 9-14. In particular, the fluorescent property can be determined by simple visual screening.

Moreover, the Applicants note that the specification provides guidance for the subject nucleic acids, for example, on page 6, line 26 through page 7, line 23; and on page 11, line 34 through page 12, line 18.

The functional domain necessary and sufficient for the fluorescent activity of GFP-like proteins is well-known in the art. For example, it can be easily detected using public BLAST software. In addition, Fig. 1 provides guidance with respect to conserved amino acids as well amino acids susceptible to change distributed throughout the sequence of the proteins.

In view of the above, Applicants respectfully submit that the experimentation needed to practice the invention defined by the claims as amended is routine and not "undue". Applicants respectfully submit that the specification provides ample

guidance and direction, coupled with the information available in the relevant art, for one of skill to practice the claimed invention without undue experimentation. Therefore, this rejection respectfully should be withdrawn.

Rejection 2.
Enablement Rejection

Regarding claim 7, Applicants have amended the claim to encompass isolated cells only. This amendment is respectfully believed to remove the basis for the rejection.

Claim Rejections - 35 USC 102

Claims 1, 5, 6, 7, 8, 17 and 27 were rejected under 35 USC 102(b) as allegedly being anticipated by Pekarsky as evidenced by GenBank AF069958. These claims were also rejected under 35 USC 102(a) and (e) as allegedly being anticipated by US 7,157,566. Applicants respectfully traverse these rejections.

The basis for these rejections is the Examiner's contention that the claims previously of record encompassed nucleic acids that would hybridize to fragments of the recited sequences and nucleic acids that have at least 70% identity to such fragments. However, as noted above, Applicants have canceled: (1) subparagraph (c) of claim 1, encompassing nucleotide sequences that hybridize under stringent conditions to the nucleotide sequences recited in this subparagraph, (2) subparagraph 1(b) of claim 1, encompassing the nucleotide sequences recited in this subparagraph,

and (3) subparagraph (e) of claim 1, encompassing nucleotide sequences with at least 70% sequence identity to the nucleotide sequences recited in this subparagraph. This amendment to the claims is respectfully believed to remove the basis for the rejections.

In view of the above, Applicants respectfully submit that all objections and rejections of record have been overcome and that the application is now in allowable form. An early notice of allowance is earnestly solicited and is believed to be fully warranted.

Respectfully submitted,

CLIFFORD J. MASS
LADAS & PARRY LLP
26 WEST 61ST STREET
NEW YORK, NEW YORK 10023
REG. NO.30,086(212)708-1890